

# A new Australian Species of *Charletonia* (Acarina: Erythraeidae)

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SOUTHCOTT, R. V. A new Australian species of *Charletonia* (Acarina: Erythraeidae).  
*Proc. Linn. Soc. N.S.W.* 107 (2), (1982) 1983: 125-130.

*Charletonia keyi* n. sp., parasitic on the grasshopper *Greyacris profundesulcata* (Carl) (Pyrgomorphidae, Monastriini), is described from Australia.

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## INTRODUCTION

Sixteen of the 32 species left by Southcott (1966) in the larval genus *Charletonia* Oudemans (Erythraeidae: Callidosomatinae) were Australasian. Treat and Flechtmann (1979) described another species from South America, and Yano and Ehara (1982) referred to an unidentified species parasitic on plant hoppers, *Nilaparvata lugens* (Stål) and *Sogatella furcifera* Horváth, from paddy fields in Japan.

Ishii (1954), Treat (1980) and Rosa and Flechtmann (1980) showed that *Charletonia* Oudemans, 1910 is a prior synonym of *Sphaerolophus* Berlese, 1910 (see Southcott, 1961: 528-529; 1966).

Some 14 postlarval species of *Charletonia* have been described, as *Sphaerolophus* spp., from Europe, South America, Africa, Australia and the Malayan region (see Southcott, 1961: 531-533), and Feider and Chioneau (1977), Treat (1975, 1978, 1979) and Witte (1977) further studied the morphology, biology and distribution of the genus as larvae, active nymphs or adults.

A new species of larval *Charletonia* parasitic on an Australian grasshopper (Pyrgomorphidae) is described below.

## DESCRIPTION AND DISCUSSION

*Charletonia keyi* n. sp.

HOLOTYPE LARVA (Figs 1 A-F, 2 A-E, 3)

Colour in life not recorded, presumably red. Idiosoma ovoid, 480 $\mu$ m long by 340 $\mu$ m wide (partially fed, slide-mounted); total length of animal from tip of cheliceral blades to posterior pole of idiosoma 595 $\mu$ m.

Dorsal scutum generally rounded, wider than long, with a slightly concave (sinuous) anterior margin. Anterolateral angles rounded, posterior sensillary bases projecting from posterior end, with a notch between them, making PL borders somewhat concave. All scutalae close to scutal margin; AL scutalae arising somewhat back from AL angles; ML scutalae about midway between AL and PL scutalae; PL scutalae somewhat behind equator of scutum. Scutalae curved, tapering, terminally blunted, with light barbs. ML scutalae shorter than the ALs (longest) and PLs. Scutum moderately chitinized, with generalized fine puncta, but without striations.

Eyes 1 + 1, cornea circular, 18 $\mu$ m across.

Dorsal idiosomalae tapering, pointed or slightly blunted at tip, lightly barbed, arranged in vague transverse lines across idiosoma, about 58 in number. Two 'ocular' setae (Oc.) near each eye.

Venter: between and behind coxae I a pair of setae, well-branched with long cilia, 35 $\mu$ m long; between coxae II a pair of pointed ciliate setae 42 $\mu$ m long; in area between

*Standard Data, etc., of Holotype*

|      |     |          |       |
|------|-----|----------|-------|
| AW   | 74  | ASens    | 38    |
| MW   | 85  | PSens    | 71    |
| PW   | 94  | ASBa/ISD | .44   |
| SBa  | 11  | DS       | 33-60 |
| SBp  | 17  | MDS      | 32-40 |
| ASBa | 24  | PDS      | 33-60 |
| ISD  | 54  | 'Oc.'    | 42-46 |
| L    | 85  | GeI      | 93    |
| W    | 102 | TiI      | 118   |
| A-M  | 14  | GeII     | 86    |
| A-P  | 31  | TiII     | 107   |
| AL   | 54  | GeIII    | 95    |
| ML   | 32  | TiIII    | 147   |
| PL   | 46  | TiI/W    | 1.16  |

coxae II and III a row of four setae, tapering, pointed, ciliate, 31-35 $\mu$ m long.

On opisthosoma behind coxae III about 19 ventralae, similar to last, but becoming blunter posteriorad, and there resembling posterior dorsaliae, 27-36 $\mu$ m long.

Coxala I long, strong, tapering, pointed, ciliate, ca 70 $\mu$ m long. Medial coxala II at last, 51 $\mu$ m long; lateral coxala II tapering, slightly blunted, ciliate, 36 $\mu$ m long. Medial coxala III as for II, 55 $\mu$ m long; lateral coxala III as for II, 33 $\mu$ m long. Supracoxala present to leg I, a blunted peg 5 $\mu$ m long.

Legs normal for genus, I 565 $\mu$ m long, II 545 $\mu$ m, III 625 $\mu$ m (all lengths including coxae and claws). Tarsus I 120 $\mu$ m long (excluding claws and pedicle) by 22 $\mu$ m high where thickest; tarsus III 123 $\mu$ m by 19 $\mu$ m similarly. For other leg metric data, see Table above. Ratio TiI/GeI 1.27, TiIII/GeIII 1.55. Femoral to tibial segments more or less cylindrical; tarsi asymmetrically spindle-shaped, thicker proximally. Leg scobalae pointed, lightly ciliate. Basifemoral formula 4, 4, 2, telofemoral 5, 5, 5.

Genu I with specialized setae SoGeI.83d and VsGeI.88pd; most distal scobala coded ScGeI.80a. Tibia with specialized setae CpTiI.65d + SoTiI.67d ('duplex pair'), SoTiI.77d, and VsTiI.86pd. Tibia III with specialized seta SoTiIII.15d.

Pedotarsal claws normal, slender. Anterior claw without cilia, posterior claw with several long cilia, forming a sparse brush, the cilia shortening distally.

Gnathosoma normal, robust, moderately chitinized. United chelae bases (slightly damaged) about 109 $\mu$ m across by about 114 $\mu$ m long to tip of cheliceral blades. Blades normal, terminal cutting edge without barbs. Hypostomal lip well fimbriated, normal. Galeala normal, tapering, pointed, simple except for about two cilia, about 27 $\mu$ m long. Anterior hypostomala pointed, tapering, simple, 13 $\mu$ m long. Posterior hypostomala slender, with long cilia, about 30 $\mu$ m long.

Palpal formula 0, 1, 1, 3, 7. Palpal supracoxala slender, 4 $\mu$ m long. Palpal tibial claw with two somewhat unequal, slightly separated prongs.

*Locality data*

Holotype, labelled M6736 and ACA2012, parasitic on grasshopper *Greyacris profundesulcata* (Carl) (Acridoidea, Pyrgomorphidae, Monastriini), ♀, Mt. White, 2 miles (3 km) S. of Coen, Queensland, 30.iv.1962, K. H. L. Key, attached on left mesepimeron (to be deposited in Australian National Insect Collection). Dr Key advises (pers. comm., 1 November 1982) that this species of grasshopper is 'cited in

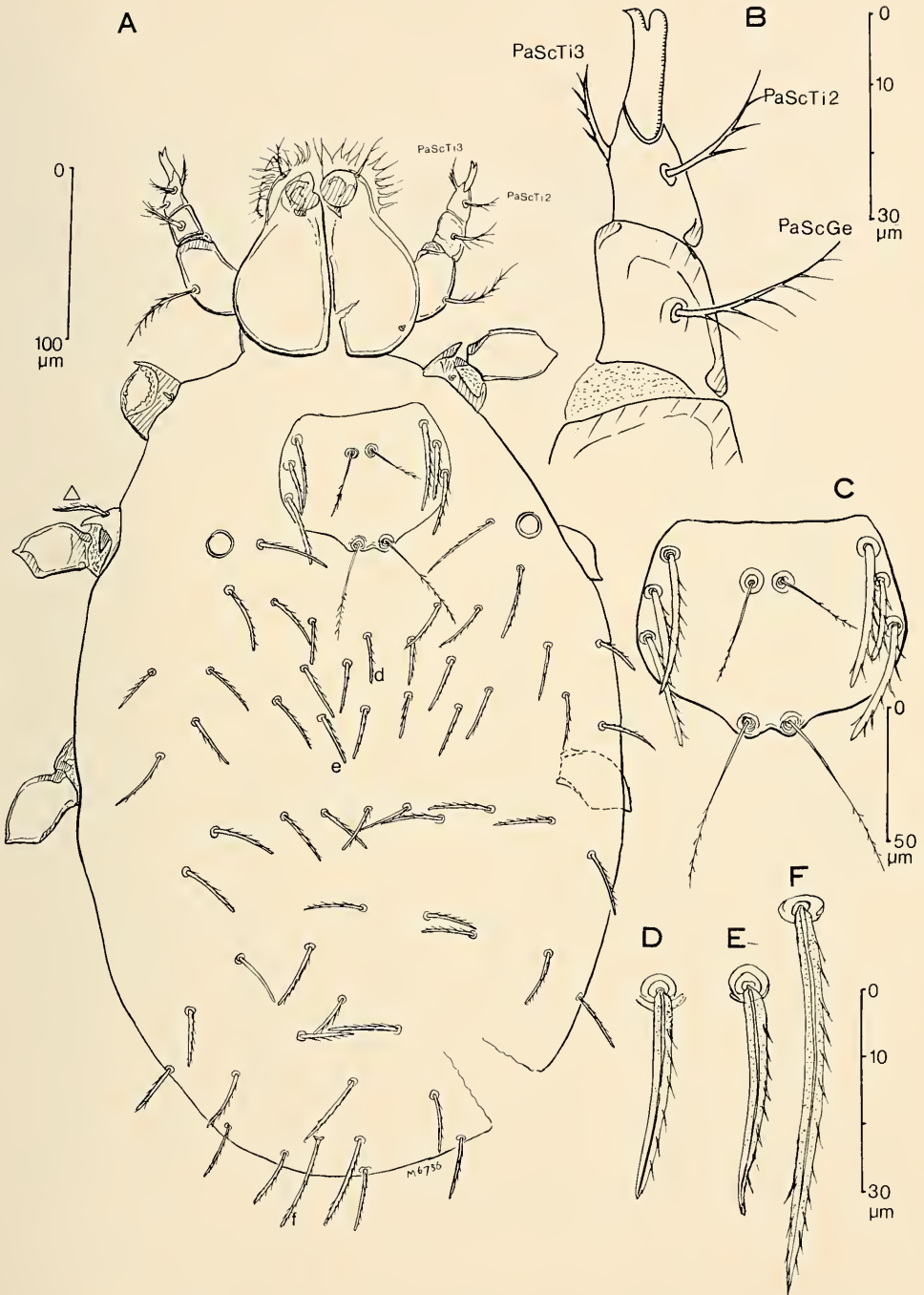


Fig. 1. *Charletonia keyi* n. sp. Holotype larva. A, Dorsal view, legs mostly omitted. B, Dorsal view of right palp, showing palpal tibial scobalae 1 and 2, also palpgenuala. C, Dorsal scutum. D, E, F, Dorsal idiosomal setae (d, e, f, respectively in A). (All figures to nearest scale).

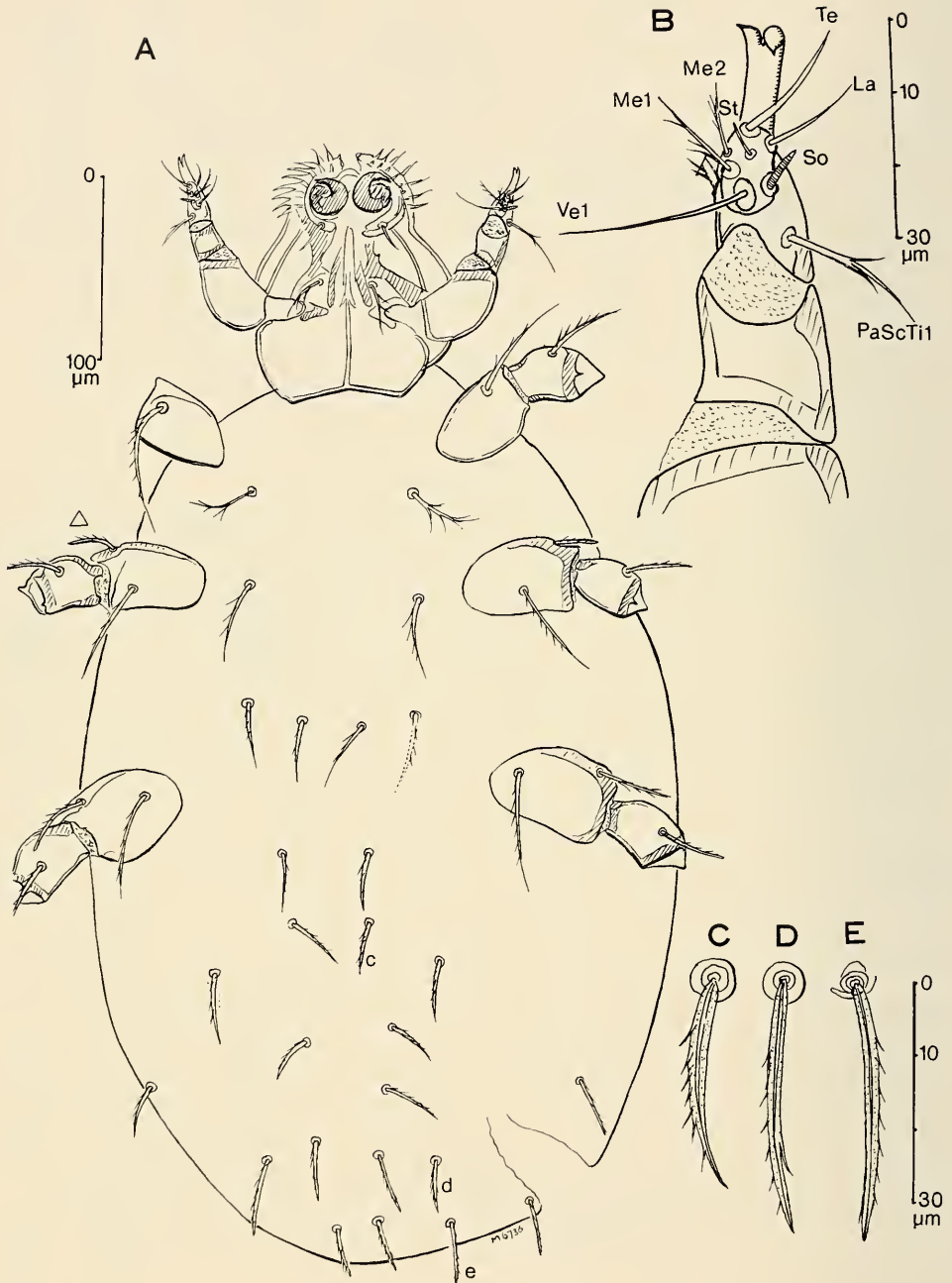


Fig. 2. *Charletonia keyi* n. sp. Holotype larva. **A**, Ventral view, legs mostly omitted. **B**, Ventral view of right palp, by transparency, with codings for palpal scobotibiala 1 and tarsal setae (Ve1, first ventral seta, Me1 and 2, first and second medial tarsal setae, Te terminal seta, St subterminal, not clearly seen in preparation, La lateral distal seta, So solenoidala). **C-E**, Opisthosomal setae (c, d, e, respectively in **A**). (All figures to nearest scale).





Fig. 3. *Charletonia keyi* n. sp. Holotype larva. Legs I, II and III, anterior and posterior aspects, to standard symbols, to scale on left. Below, tip of tarsus I, anterior and posterior aspects, to adjacent scale.

existing literature as *Monistria profundesulcata* — syn. *M. roseipennis* Sjöstedt, but assigned to *Greyacris* in my paper now in preparation'. (See Key, 1969, for further references to these grasshoppers.)

### *Nomenclature*

Dedicated to the collector, Dr K. H. L. Key, who was responsible for instigating the CSIRO 'grasshopper mite project'.

### *Remarks*

*Charletonia keyi* comes nearest to *C. banksi* Southcott, 1966, but differs in having the lateral border of the dorsal scutum convex instead of concave, in the DS being only adnately barbed, the smaller number of DS (58 instead of 89), in the smaller ratio of TiI/W (1.16 instead of 1.37-1.50), etc.

Evidently it is a rare species, only a single specimen having been submitted among the parasites of several thousand Australian grasshoppers.

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\* Part bibliography only; earlier references are listed in Southcott (1961, 1966).